

JUN 29 2006

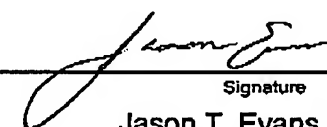
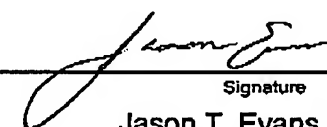
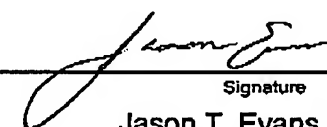
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PTO/SB/33 (07-05)

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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) K35A1281													
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]  on _____  Signature _____  Typed or printed name _____	Application Number  10/676,739	Filed  09/30/2003													
	First Named Inventor  William B. Boyle, et al.														
	Art Unit  2186	Examiner  Paul W. Schlie													
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <table border="0"><tr><td><input type="checkbox"/> applicant/inventor.</td><td rowspan="3"> Signature <b>Jason T. Evans, Esq.</b> Typed or printed name  (949) 672-9474 Telephone number  June 29, 2006 Date</td></tr><tr><td><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</td></tr><tr><td><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>57,862</u></td></tr><tr><td><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____</td><td colspan="3"></td></tr><tr><td colspan="4"><p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.</p><p><input checked="" type="checkbox"/> Total of <u>One (1)</u> forms are submitted.</p></td></tr></table>				<input type="checkbox"/> applicant/inventor.	 Signature <b>Jason T. Evans, Esq.</b> Typed or printed name  (949) 672-9474 Telephone number  June 29, 2006 Date	<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)	<input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>57,862</u>	<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____				<p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.</p> <p><input checked="" type="checkbox"/> Total of <u>One (1)</u> forms are submitted.</p>			
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This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of: William B. Boyle, et al.

Serial No.: 10/676,739

Filing Date: 09/30/2003

For: REDUCING MICRO-CONTROLLER  
ACCESS TIME TO DATA STORED IN A  
REMOTE MEMORY IN A DISK DRIVE  
CONTROL SYSTEM

Art Unit: 2186

Examiner: Paul W. Schlie

Confirmation No.: 7957

Docket No.: K35A1281

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir,

The following reasons are submitted for a pre-appeal brief review together with a Notice of Appeal filed herewith for the above-identified application.

Art Unit 2186  
Serial No.: 10/676,739

PATENT  
Attorney Docket No.: K35A1281

#### SUMMARY OF CLAIMED SUBJECT MATTER

FIGs. 2A and 2B show a disk drive control system 202 according to an embodiment of the present invention comprising a micro-controller 204, a micro-controller cache system 205 having a plurality of line-cache segments 240a and 240b grouped into at least one line-cache segment-group (FIG. 2B), and a buffer manager 209 communicating with the micro-controller cache system 205 and a remote memory (e.g., DRAM 208). A method is disclosed for reducing the micro-controller 204 access time to information stored in the remote memory 208 via the buffer manager 209, the method comprising receiving in the micro-controller cache system 205 a current data-request from the micro-controller 204, and if the current requested data resides in a first line-cache segment of a first segment-group (e.g., line-cache segment 240a of SEGMENT-GROUP\_1 of FIG. 2B):

providing the current requested data to the micro-controller 204; and  
automatically filling a second line-cache segment 240b of the first segment-group with data retrieved from the remote memory 208 wherein the retrieved data is sequential in the remote memory 208 to the provided current requested data if the second line-cache segment 240b hosted a most-recently requested data prior to the current requested data.

#### GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 4-14 and 17-19 stand rejected under 35 USC §102(b) as anticipated over U.S. Patent No. 6,360,299 to Arimilli et al.

The examiner asserts that Arimilli discloses the limitations recited in the claims, including to automatically fill a second line-cache segment of a first segment-group with data retrieved from a remote memory wherein the retrieved data is sequential in the

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remote memory to a current requested data if the second line-cache segment hosted a most-recently requested data prior to the current requested data.

#### ARGUMENT

##### I. THE ISSUE UNDER 35 U.S.C. §102(b)

- A. The rejection should be reversed because Arimilli does not disclose or suggest to automatically fill a second line-cache segment if the second line-cache segment hosted a most-recently requested data prior to the current requested data

The rejection should be reversed because Arimilli does not disclose or suggest to automatically fill a second line-cache segment if the second line-cache segment hosted a most-recently requested data prior to the current requested data.

Arimilli discloses at column 10, lines 27-31: "[a]n additional bit 229 may optionally be utilized to indicate as between the two slots, which is the most recently used, for those cases wherein a prefetch request misses the L2 cache and both slots already have prefetched lines with different stream IDs." However, this passage does not teach the step of "automatically filling a second line-cache segment . . . if the second line-cache segment hosted a most-recently requested data," as recited by the amended claim.

Instead, Arimilli's method of selecting a next "victim" line for filling uses "a standard victim selection algorithm, such as a least-recently, or less-recently, used (LRU) algorithm, which is applied to all sets including the prefetched line." Col. 9, ll. 55-58. Thus, according to Arimilli's method, the line that has been least-recently used is used to receive new data. For example, Arimilli describes that "[w]hen a prefetch request misses the L2 cache and neither slot is allocated, a victim is selected using the standard LRU algorithm" (Col. 10, ll. 4-6), and "[t]he prefetch slots are not exclusively used for speculative requests; they may be used for non-prefetch requests if the standard LRU algorithm were to select that set for victimization" (Col. 10, ll. 11-14).

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Arimilli does not disclose any other algorithm for selecting the next line for victimization. Therefore, Arimilli does not disclose "automatically filling a second line-cache segment... if the second line-cache segment hosted a most-recently requested data." Instead, the additional bit 229 called out by the Examiner would likely be used to protect a slot, to prevent the most recently used slot from being victimized. Indeed, there is no disclosure or suggestion anywhere in Arimilli of automatically filling a line-cache segment if the most recently used bit 229 is set for that line-cache segment.

In response to the above argument, the examiner asserts that if Arimilli were modified so as to have a pre-fetch limit of 2 cache lines, then "upon access to a first cache line pre-fetched resulting from a sequentially preceding access to a second cache line, said second cache line would inherently have hosted a previously cached immediately preceding sequential access to said first cache line." However, "the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260 (1992).

Not only does Arimilli fail to disclose the modification suggested by the examiner, but the suggested modification is completely untenable. A designer would not implement Arimilli's cache system with a 2 cache line pre-fetch limit because pre-fetching with such a low cache line limit would yield imperceptible benefits (indeed, Arimilli makes no suggestion that such a modification would be desirable). The examiner has suggested a modification to Arimilli without relying on any prior art (a modification that is not even practical from an engineering standpoint). This rejection is not proper and should be reversed.

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CONCLUSION

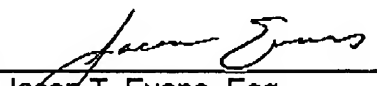
Reversal of the rejections is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 23-1209, and please credit any excess fees to such deposit account.

Respectfully submitted,

Date: June 29, 2006

By: \_\_\_\_\_

  
Jason T. Evans, Esq.  
Reg. No. 57,862

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